

REMARKS

Claims 27, 30 – 32, 34, 35, 37 – 42, 47 – 50 and 55 - 57 are pending in the present application. Claims 1 – 26, 28, 29, 33, 36 and 43 – 46 were previously canceled, and claims 51 - 54 are being canceled by the present amendment. Claim 57 is newly added. Reconsideration of the application is respectfully requested.

In item 3 of the Office Action, claims 27, 30, 31, 34, 35, 37 – 42 and 47 – 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,195,201 to Koch et al. (hereinafter "the Koch et al. patent") in view of U.S. Patent No. 5,978,072 to Nojima (hereinafter "the Nojima patent"). Claims 27, 37, 47, 49 and 55 are independent claims. Applicants are rewriting claims 27, 37, 47, 49 and 55 to recite a combination of features that is neither disclosed nor suggested by the cited combination of the Koch et al. and Nojima patents.

Claim 27 provides for a projection exposure system. The system includes, *inter alia*, an illumination system that, in turn, includes (a) a plate having a plurality of reflective raster elements situated thereon for directing a light beam, (b) a carrier upon which the plate is arranged, for positioning the plate relative to the light beam, wherein the light beam follows a zigzag path within the illumination system, and (c) a reticle plane defined by a y-direction and an x-direction, wherein the carrier is moveable along a line only in the x-direction.

In the present application, the specification, in a paragraph at page 12, line 21, mentions the use of a zigzag beam path in a reflective system. FIG. 10 shows an illumination system 26 in which light follows a zigzag beam path. Illumination system 26 includes a carrier system 104 that moves in the x-direction (page 18, lines 26 – 28), and as illustrated in FIG. 10, is limited to movement only in the x-direction.

In an illumination system a zigzag beam path, a carrier system cannot be permitted to move in the y-direction or z-direction, as such movement would obstruct the beam path between optical elements.

For example, in FIG. 10, if carrier system 104 were shifted in the y-direction or the z-direction, then it would obstruct the beam path between optical element 8 and mirror 12.1. In a refractive system it is not necessary to restrict the movement of a carrier to only the x-direction.

The Office Action, on page 4, acknowledges that the Koch et al. patent does not disclose a carrier upon which a plate is arranged, for positioning the plate relative to a light beam. Thus, the Office Action introduces the Nojima patent.

The Nojima patent is directed toward an exposure apparatus (Abstract). The exposure apparatus includes a fly-eye lens 14 (FIG. 1; col. 2, line 43), and either an adjustable holding mechanism 40 (FIG. 3; and col. 3, lines 24 – 25) or an adjustable holding mechanism 60 (FIG. 4; and col. 4, line 50). As is apparent from FIG. 1, fly-eye lens 14 is a refractive element. Each of adjustable holding mechanisms 40 and 60 is for adjusting a position of fly-eye lens 14 in each of an X direction, Y direction and Z direction (col. 3, lines 48 – 53; col. 5, lines 20 – 32).

Whereas the Koch et al. patent does not disclose a carrier for positioning a plate relative to a light beam, and whereas the Nojima patent discloses adjustable holding mechanisms 40 and 60 is for adjusting a position of fly-eye lens 14 in each of an X direction, Y direction and Z direction, the cited combination of the Koch et al. and Nojima patents does not disclose or suggest that a carrier is moveable along a line **only in an x-direction**, as recited in claim 27.

Additionally, whereas the Nojima patent discloses a refractive system, and whereas in a refractive system it is not necessary to restrict the movement of a carrier to only the x-direction, Applicants submit that a person skilled in the art would not be motivated to combine elements from the refractive system of the Nojima with the reflective system of the Koch et al. patent.

For the reasons provided above, Applicants submit that claim 27 is patentable over the cited combination of the Koch et al. and Nojima patents.

Claims 37, 47, 49 and 55 each includes recitals similar to those of claim 1, described above. Accordingly, claims 37, 47, 49 and 55, for reasoning similar to that provided in support of claim 27, are also patentable over the cited combination of the Koch et al. and Nojima patents.

Claims 30, 31, 34, 35, 38 – 42, 48, 50 and 56 each depend from one of claims 27, 37, 47 or 55. By virtue of the dependencies, claims 30, 31, 34, 35, 38 – 42, 48, 50 and 56 are also patentable over the cited combination of the Koch et al. and Nojima patents.

Claims 51 – 54 are canceled. As such, the rejection thereof is rendered moot.

Applicants respectfully request reconsideration and withdrawal of the section 103(a) rejection of claims 27, 30, 31, 34, 35, 37 – 42 and 47 – 56.

In item 4 of the Office Action, claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Koch et al. patent in view of the Nojima patent, and further in view of U.S. Patent Application Publication No. 2002/0196416 to Shiraishi (hereinafter "the Shiraishi publication").

Claim 32 depends from claim 27. Applicants respectfully submit that the Shiraishi publication does not make up for the deficiencies of the Koch et al. and Nojima patents, as the Koch et al. and Nojima patents relate to claim 27. Accordingly, Applicants further submit that claim 27, and claim 32, by virtue of its dependence on claim 27, are both patentable over the cited combination of the Koch et al. patent, the Nojima patent, and the Shiraishi publication.

Applicants respectfully request reconsideration and withdrawal of the section 103(a) rejection of claim 32.

As mentioned above, Applicants are rewriting claims 27, 37, 47, 49 and 55 to recite a combination of features that is neither disclosed nor suggested by the cited combination of the Koch et al. and Nojima patents. Applicants are also amending claims 27, 37, 47, 49 and 55 to replace the

mathematical operator " \leq " with the phrase "less than or equal to", so that the Office does not inadvertently interpret the symbol as "<" with an underline meaning added text. Additionally, Applicants are amending claims 31, 34, 35, 38 – 42, 50 and 56 for consistency with the claims from which they depend.

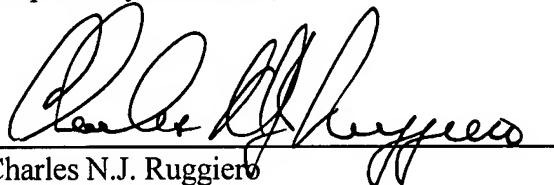
Applicants are adding claim 57 to even further provide the claim coverage that Applicants appear to deserve based on the prior art that was cited by the Examiner. Support for claim 57 can be found in the specification at page 12, line 18. A favorable consideration that also results in the allowance of claims 57 is earnestly solicited.

In view of the foregoing, Applicants respectfully submit that all claims presented in this application patentably distinguish over the prior art. Accordingly, Applicants respectfully request favorable consideration and that this application be passed to allowance.

Respectfully submitted,

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Date



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